of black irrorations: secondaries silvery white with pearly reflections: body snow-white. Wings below sordid white with faint golden reflections; body white. Expanse of wings 10 lines.

One specimen. Kurrachee, July 1880.

104. Eriocottis fuscanella?

Eriocottis fuscanella, Zeller, Isis, p. 813 (1847).

Two worn specimens. Kurrachee, May 1880.

The types and all the better examples in this series of Lepidoptera are incorporated with the national collection.

8. Note on some Points in the Anatomy of the Cæcum in the Rabbit (*Lepus cuniculus*) and Hare (*Lepus timidus*). By W. N. Parker, Assistant in the Biological Laboratory of the Royal School of Mines.

[Received March 15, 1881.]

(Plate LIII.)

Some few months ago Prof. Huxley called my attention to the fact that Krause's description of the relations of the ileum and sacculus rotundus to the cæcum in the Rabbit (Anatomie des Kaninchens, pp. 156, 157) was incorrect, and proposed that I should look the matter up. I therefore examined the structure of these parts again, not only in the Rabbit, but also in the Hare, and in doing so noted the following resemblances and differences.

In both the cæcum, as is usual in grass-eating mammals which have a comparatively simple stomach, is of a relatively enormous size, being on an average, when straightened out, about 1 foot 8 inches long in a moderate-sized Rabbit, and rather more in the Hare. This measurement includes the *appendix vermiformis*, which varies from about $3\frac{1}{2}$ to $4\frac{1}{2}$ inches in length.

The ileum appears externally, in both species, to pass directly into the sacculus rotundus, at right angles to the long axis of the cæcum. The sacculus has an ovoidal shape, its long axis being transverse to the long axis of the cæcum in the Rabbit (fig. IV.), but longitudinal in the Hare (fig. II.)

In both also the cæcum passes insensibly into the colon, which runs straight from it for about 2 or $2\frac{1}{4}$ inches, and then makes a sudden bend in the opposite direction, taking on the characteristic form, with the sacculations and the three *tæniæ coli*.

Daubenton (Histoire Naturelle, tome sixième) describes the sacculus as a pocket near the junction of the ileum with the colon, and gives figures (pls. xl., xli. pp. 273, 274), of the Hare's cæcum both entire and cut open, the latter showing the two distinct apertures of the sacculus and ileum into the colon (fig. I. *s.c*, *i.c*); but he gives no details on this point in the Rabbit (p. 321). Krause describes these

two apertures as separate in the Rabbit; but this is not the case, as in the latter animal the ileum opens directly into the sacculus, and there is thus only one common aperture into the colon (fig. III. *s.c*) The lips of this round aperture form the so-called ileo-colic valve; and its edge is often prolonged into a short process on one side.

In other respects, with the exception of the number of turns of the spiral valve, of which mention is made below, the cæca of these two species present no important differences; and the following description applies to both of them.

The only other reference to this matter I have been able to find is in a paper by Dr. Edwards Crisp, "On some Points relating to the Habits and Anatomy of the Oceanic and of the Freshwater Ducks, and also of the Hare (*Lepus timidus*) and of the Rabbit (*L. cuniculus*), in relation to the Question of Hybridism" (Proc. Zool. Soc. 1861, p. 82). In this paper, however, Dr. Crisp states that he has compared the various viscera of these two animals, but has found no important difference in them.

In the Piping Hare (*Lagomys pusillus*) there are two cæca, a large and a small one. It seems probable that the latter is simply an elongated *sacculus rotundus* [1].

Both the *sacculus rotundus* and the *appendix vermiformis* consist internally of a mass of lymphoid tissue, abundantly supplied with lymphatic vessels, each answering to an enormous Peyer's patch, and having the ordinary structure [2]. Another Peyer's patch, averaging about $\frac{3}{4}$ of an inch in diameter, but varying much in size and shape, occurs in the colon close to the aperture of the sacculus, on the side which is furthest from the entrance of the ileum (figs. I. & III. p^1). A much smaller one (fig. III. p^2) sometimes occurs on the other side; but this is very inconstant.

A valve begins a short distance below the entrance of the ileum, and makes about one turn (v^2), passing close above the ileo-colic aperture, and is then either continued into the spiral valve of the cæcum (v^3), as seen in fig. III., or else ends off gradually, and the spiral valve begins about $\frac{1}{4}$ or $\frac{3}{8}$ of an inch higher up (fig. I.). This variation is seen in both species.

Another valve, which is mentioned by Daubenton, and which Prof. Huxley in his lectures speaks of as the *intracolic valve* (v^1), begins close to the sharp bend of the colon, and then makes one turn in a spiral manner, ending off gradually, but being very large in the middle; it thus is capable of closing the way into the colon, and causing the contents of the ileum to pass up the cæcum.

In the Rabbit the spiral valve makes 24 turns, not including the part passing close above the ileo-colic aperture, which, as stated above, is quite separate in many cases. In the Hare the number of turns was 29 in the specimens I examined.

The method I found to be most successful in making out the structure and relations of these parts was, to carefully clean out the

[1] See Gegenbaur's 'Elements of Comp. Anat.,' English edition, p. 562, fig. 318 (after Pallas).

[2] See fig. 1, p. 17, of the Harveian Oration 1873, by Dr. Rolleston, F.R.S.

cæcum, with a portion of both ileum and colon, and then to distend it with ½-per-cent. chromic acid, placing it in a vessel of the same fluid. This was changed after the first day, and replaced by acid of the same strength, in which it was left for a week or so, after which the cæcum was washed, and then distended with, and placed in, weak spirit for a short time, and finally in strong methylated spirit.

EXPLANATION OF PLATE LIII.

Figs. I., II. *Lepus timidus.*
III., IV. *Lepus cuniculus.*

c, cæcum. *co*, colon. *i*, ileum. *i.c*, ileo-colic aperture. p^1, large intracolic Peyer's patch. p^2, small intracolic Peyer's patch. *s*, sacculus rotundus. *s.c*, aperture of sacculus into colon. v^1, large intracolic valve. v^2, second valve, which is sometimes continuous with the spiral valve of the cæcum. v^3, spiral valve of the cæcum.

May 17, 1881.

Prof. W. H. Flower, LL.D., F.R.S., President, in the Chair.

The Secretary read the following report on the additions to the Society's Menagerie during the month of April 1881:—

The total number of registered additions to the Society's Menagerie during the month of April was 117, of which 66 were by presentation, 5 by birth, 24 by purchase, 7 by exchange, and 15 were received on deposit. The total number of departures during the same period, by death and removals, was 109.

The most remarkable additions during the month of April were as follows:—

1. An Indian Darter, *Plotus melanogaster*, received in exchange from the Zoological Gardens, Calcutta, April 8th.

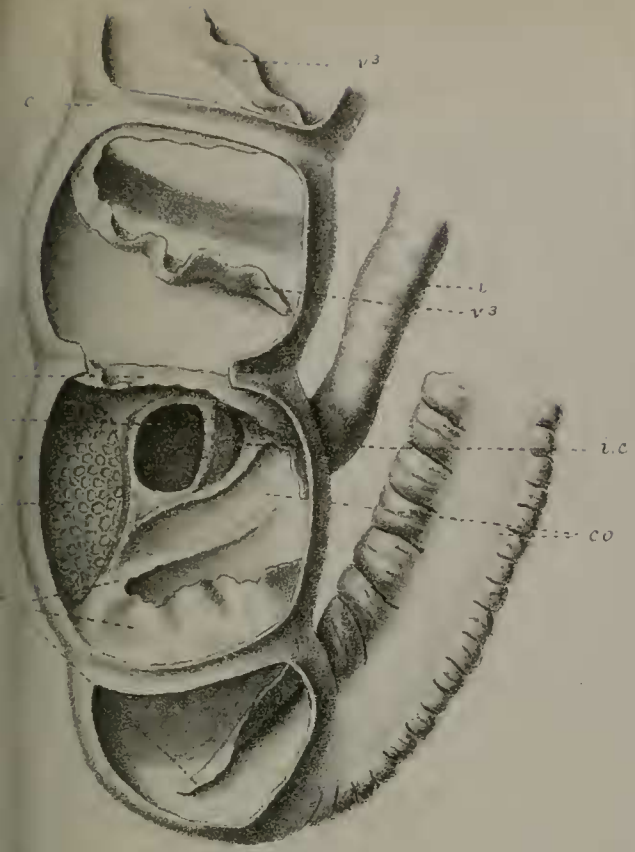
This is the first living example we have received of the Indian Darter, previous examples of this genus having belonged to *Plotus anhinga* of South America and *Plotus levaillanti* of Africa. Of the former we have at present a specimen in the Gardens. The Indian Darter is readily distinguishable from the American species by its longer and more slender neck and longer tail, not to mention differences of coloration.

2. A young female Beisa Antelope (*Oryx beisa*), born in the Gardens April 12th, believed to be the first example of this Antelope that has been bred in captivity. I exhibit a coloured drawing of this animal by Mr. Smit (see Plate LIV.), which may be compared with the figures of the young Leucoryx given in the 'Knowsley Menagerie' (plate xvi.).

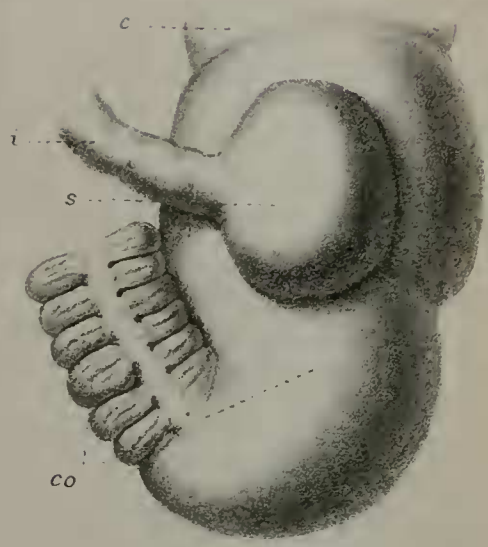
3. A Mountain Ka Ka (*Nestor notabilis*), transmitted as a present to the Society by Dr. A. de Lautour, of Otago, New Zealand. Dr. de Lautour has favoured me with the subjoined particulars concerning this bird:—

"I have the pleasure of informing you that I am sending home for

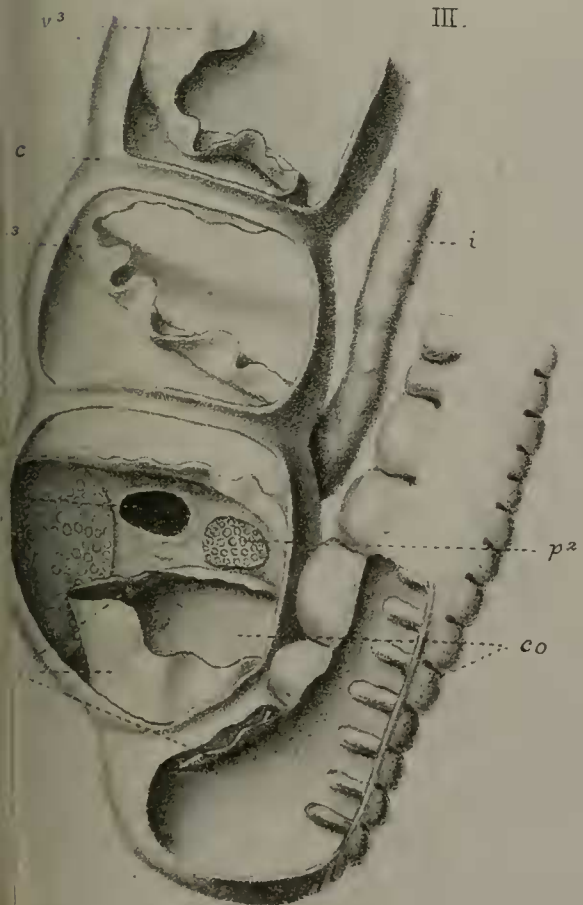
I.



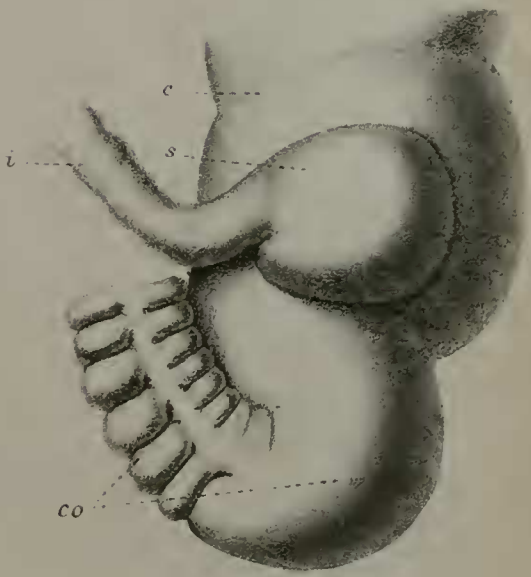
II.



III.



IV



P. Parker ath.
N. & M.P. Parker del. ad nat.

West Newman & Co. imp.

Anatomy of Lepus.